TECH STUDY
CH 6 PHYSICAL AND CHEMICAL CHANGES

There are several differences between a physical and chemical change in Inatter or substances.

A change in which no new substances are formed and can be reversed using physical ways is called a physical change.

Also, a change in which new substances are formed and cannot be reversed by physical methods is called as a chemical change.

For example, if a piece of paper is cut up into small pieces, it still is paper. This would be a physical change, as the only change is' in the shape and size of the paper. If the same piece of paper is burned, it is burnt up into deterrent substances that are not paper and changes the chemical properties.

Physical change can be reversed, chemical changes cannot be reversed with the substance changed back without extraordinary means, if at all. For example, a cup of water can be Frozen when cooled and then can be returned to a liquid form when heated.

If one decides to mix sugar into water to make sugar water, this would be a physical change as the water could be left out to evaporate and the sugar crystals would remain. However, if one Inade a recipe or a cake with flour, water, sugar and other ingredients and baked then together, it would take extraordinary means to separate the various ingredients out to their original form.

When heat is given off in a chemical change or reaction, it is called an exothermic reaction. When heat is absorbed in a chemical change or reaction, it is called an endothermic reaction,

Physical and chemical change can take place together. A common example is the burning of candle. The melting of wax and solidification of molten wax are physical changes. The burning of molten wax is a chemical change (due to which the size of candle reduces with tine).

- When substances made of Iron are exposed to oxygen and moisture in the atmosphere, it forms a red layer, which is called **rust**.
- The formation of rust can be represented by the following reaction:
- **$4Fe + 3O_2 \rightarrow 2Fe_2O_3$** The chemical formula for rust is $Fe_2O_3.nH_2O$. More the moisture in the air, quicker the formation of rust.

WAYS TO PREVENT FROM RUSTING

- Oiling
- **Galvanization**
- Tinning
- Painting

Difference between Physical and Chemical Change.

Physical Change	Chemical Change
1. It is a temporary change	1. It is a permanent change
2. Occurs due to change in physical properties	2. Occurs due to change in chemical properties
3. No new substance is formed.	3. New Substance is formed
4. Can be reversed by physical methods	4. Cannot be reversed by physical methods

DEFINITIONS

l. Physical Change: A change in which no new substance is formed.

2. Chemical Change: A change in which new substances are formed.

3. Rusting: The conversion of iron into iron oxide due to exposure with air and moisture is called rusting.

4. Crystallisation: The process of obtaining a pure salt from its impure fraction is called crystallisation.

5. Galvanisation: The process of coating iron objects with zinc to prevent corrosion.